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LL          II            SS
LLLLLLLLLLLL IIIIII          SSSSSSSS
LLLLLLLLLLLL IIIIII          SSSSSSSS

```

(2)	50	HISTORY	; Detailed Current Edit History
(3)	63	DECLARATIONS	
(4)	95	MTHSHINT	H to H truncation
(5)	145	MTHSHINT_RB	JSB entry point

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```

0000 1      .TITLE MTHSHINT - FLOATING TRUNCATION
0000 2      .IDENT /1-005/                      ; File: MTHSHINT.MAR      EDIT: JAW1005
0000 3
0000 4      :
0000 5      :*****
0000 6      :
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0000 24     :
0000 25     :
0000 26     :*****
0000 27     :
0000 28     :
0000 29     : FACILITY: MATH LIBRARY
0000 30     :++
0000 31     : ABSTRACT:
0000 32     :   This module contains routine MTHSHINT:
0000 33     :   Return truncated H floating argument.
0000 34     :
0000 35     :
0000 36     :--
0000 37     :
0000 38     : VERSION: 1
0000 39     :
0000 40     : HISTORY:
0000 41     :
0000 42     : AUTHOR:
0000 43     :   Steven B. Lionel, 18-Jan-79: Version 1
0000 44     :
0000 45     : MODIFIED BY:
0000 46     :
0000 47     :
0000 48     :

```


MTHSHINT
1-005

- FLOATING TRUNCATION

N 1

HISTORY ; Detailed Current Edit History

16-SEP-1984 01:36:26

VAX/VMS Macro V04-00

6-SEP-1984 11:25:00

[MTHRTL.SRC]MTHSHINT.MAR;1

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(2)

```
0000 50 .SBTTL HISTORY ; Detailed Current Edit History
0000 51
0000 52
0000 53 ; Edit History for Version 1 of MTHSHINT
0000 54 :
0000 55 1-001 - Original. SBL 18-Jan-79
0000 56 1-002 - Add a JSB entry point. JBS 16-AUG-1979
0000 57 1-003 - Change JSB entry to _R8 to reflect code to disable IV.
0000 58 SBL 26-Sept-1979
0000 59 1-004 - Changed RET in JSB routine to RSB. 11-FEB-81
0000 60 1-005 - Mask all bits except IV when restoring PSW. JAW 14-Jul-1981
0000 61 :
```

```
0000 63      .SBTTL  DECLARATIONS
0000 64
0000 65 :
0000 66 : INCLUDE FILES:
0000 67 :     NONE
0000 68 :
0000 69 :
0000 70 :
0000 71 : EXTERNAL SYMBOLS:
0000 72 :     NONE
0000 73 :
0000 74 :
0000 75 :
0000 76 : MACROS:
0000 77 :
0000 78 :     $PSLDEF                      ; PSL macros
0000 79 :
0000 80 :
0000 81 :
0000 82 : PSECT DECLARATIONS:
0000 83 :     .PSECT _MTH$CODE          PIC, SHR, LONG, EXE, NOWRT
00000000 84 :
0000 85 :
0000 86 : EQUATED SYMBOLS:
0000 87 :     NONE
0000 88 :
0000 89 :
0000 90 :
0000 91 : OWN STORAGE:
0000 92 :     NONE
0000 93 :
```

```
0000 95 .SBTTL MTH$HINT H to H truncation
0000 96
0000 97 :++
0000 98 : FUNCTIONAL DESCRIPTION:
0000 99 :
0000 100 : Returns the argument with all zeroes to the right of the decimal
0000 101 : point.
0000 102 :
0000 103 : Because the result can not be expressed in 64 bits, it is
0000 104 : returned as the first argument with the input parameter
0000 105 : displaced to the second argument, in accordance with
0000 106 : the system standard.
0000 107 :
0000 108 : CALLING SEQUENCE:
0000 109 :
0000 110 : CALL MTH$HINT (truncation.wh.r, arg.rh.r)
0000 111 :
0000 112 : INPUT PARAMETERS:
0000 113 :
0000 114 : The input argument is a H floating-point value
0000 115 : and is call-by-reference.
0000 116 :
0000 117 : IMPLICIT INPUTS:
0000 118 :
0000 119 : NONE
0000 120 :
0000 121 : OUTPUT PARAMETERS:
0000 122 :
0000 123 : The output argument is an H floating-point value
0000 124 : and is returned by reference.
0000 125 :
0000 126 : IMPLICIT OUTPUTS:
0000 127 :
0000 128 : NONE
0000 129 :
0000 130 : COMPLETION CODES:
0000 131 :
0000 132 : NONE
0000 133 :
0000 134 : SIDE EFFECTS:
0000 135 :
0000 136 : Reserved Operand exception can occur.
0000 137 :
0000 138 :--
0000 139 :.ENTRY MTH$HINT, ^M<>
04 BC 08 00 08 BC 74FD 0002 140 EMODH @8(AP), #0, #1, @4(AP), @4(AP)
0000 141
0000 142 SUBH3 @4(AP), @8(AP), @4(AP) ; first arg gets fraction
04 BC 08 BC 04 BC 63FD 000C 143 RET ; @4(AP) = integer_part(arg)
0000 144
```



```
0015 145 .SBTTL MTH$HINT_R8 JSB entry point
0015 146
0015 147 :++
0015 148 : FUNCTIONAL DESCRIPTION:
0015 149 :
0015 150 : Returns the argument with all zeroes to the right of the decimal
0015 151 : point.
0015 152 :
0015 153 : CALLING SEQUENCE:
0015 154 :
0015 155 : truncation.wh.v = JSB MTH$HINT_R8 (arg.rh.v)
0015 156 :
0015 157 : INPUT PARAMETERS:
0015 158 :
0015 159 : The input argument is a H floating-point value
0015 160 : and is call-by-value.
0015 161 :
0015 162 : IMPLICIT INPUTS:
0015 163 :
0015 164 : NONE
0015 165 :
0015 166 : OUTPUT PARAMETERS:
0015 167 :
0015 168 : The output argument is an H floating-point value
0015 169 : and is returned by value in registers R0-R3.
0015 170 :
0015 171 : IMPLICIT OUTPUTS:
0015 172 :
0015 173 : NONE
0015 174 :
0015 175 : COMPLETION CODES:
0015 176 :
0015 177 : NONE
0015 178 :
0015 179 : SIDE EFFECTS:
0015 180 :
0015 181 : Reserved Operand exception can occur.
0015 182 :
0015 183 :--
0015 184 MTH$HINT R8::
0015 185 MOVPSL R8 ; Argument in R0-R3
0017 186 BICPSW #PSL$M_IV ; Save PSL
0019 187 EMODH R0, #0, #1, R4, R4 ; Clear IV
0020 188 SUBH3 R4, R0, R0 ; R4-R7 gets fraction
0025 189 BICW #^C<PSL$M_IV>, R8 ; R0-R3 = integer part(arg)
002A 190 BISPSW R8 ; Clear all but IV
002C 191 RSB ; Restore IV to previous state
002D 192
002D 193 .END
```

```
54 54 08 00 58 DC
50 50 20 B9
58 FFDF 54 63FD 74FD
8F AA
58 B8
05
```

```
; Argument in R0-R3
; Save PSL
; Clear IV
; R4-R7 gets fraction
; R0-R3 = integer part(arg)
; Clear all but IV
; Restore IV to previous state
```


MTH\$HINT
Symbol table

- FLOATING TRUNCATION

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16-SEP-1984 01:36:26 VAX/VMS Macro V04-00
6-SEP-1984 11:25:00 [MTHRTL.SRC]MTHHINT.MAR;1

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MTH\$HINT 00000000 RG 02
MTH\$HINT_R8 00000015 RG 02
PSL\$M_IV = 00000020

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$ABSS	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
_MTH\$CODE	0000002D (45.)	02 (2.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.10	00:00:00.79
Command processing	118	00:00:00.50	00:00:02.74
Pass 1	119	00:00:00.97	00:00:04.67
Symbol table sort	0	00:00:00.02	00:00:00.02
Pass 2	47	00:00:00.48	00:00:01.49
Symbol table output	2	00:00:00.02	00:00:00.02
Psect synopsis output	2	00:00:00.02	00:00:00.16
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	319	00:00:02.13	00:00:09.95

The working set limit was 900 pages.
4109 bytes (9 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 41 non-local and 0 local symbols.
193 source lines were read in Pass 1, producing 13 object records in Pass 2.
8 pages of virtual memory were used to define 7 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	4

98 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:MTHHINT/OBJ=OBJ\$:MTHHINT MSRC\$:MTHHINT/UPDATE=(ENH\$:MTHHINT)

0262 AH-BT13A-SE
VAX/VMS V4.0

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